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ANNUAL VACCINATION RETURNS

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1915-1916

WITH BRIEF EXPLANATORY NOTES

BY

MAJOR T. C. McCOMBIE YOUNG, I.M.S.,
SANITARY COMMISSIONER, ASSAM.



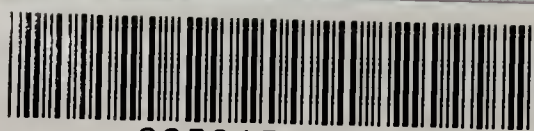
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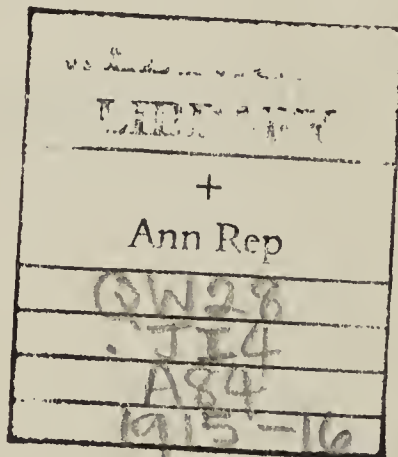
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FROM

MAJOR T. C. McCOMBIE YOUNG, M.D., D.P.H., I.M.S.,
SANITARY COMMISSIONER, ASSAM,

TO

THE SECOND SECRETARY TO THE CHIEF COMMISSIONER
OF ASSAM.

Dated Shillong, the 10th June 1916.

SIR,

I HAVE the honour to submit herewith the Annual Vaccination Report of the Province of Assam for the year 1915-16, with brief explanatory notes.

I have the honour to be,

SIR,

Your most obedient Servant,

T. C. McCOMBIE YOUNG, *Major, I.M.S.*,

Sanitary Commissioner, Assam.

NOTES ON VACCINATION IN ASSAM FOR THE YEAR 1915-1916.

1. *Introductory.*—The charge of the Department was held by the Hon'ble Colonel H. E. Banatvala, I.M.S., from the beginning of the year to the end of the month of June and by me from July to the end of the year.

2. *Vaccination agencies.*—Vaccination was performed among the general population by 303 departmental vaccinators and on tea gardens by garden medical officers. Medical officers of jails, railways and of dispensaries in certain districts also performed vaccination operations within their respective jurisdictions. The average number of persons vaccinated by each vaccinator during the year was 961 against 907 of the preceding year.

3. *Total number of operations.*—The number of vaccination operations performed by all agencies in 1915-1916 was 312,398 as compared with 320,016 of the year 1914-1915, showing a decrease of 6,719 in the primary operations and 899 in revaccinations. The variations in district returns are noted in section 8 of this report. It is probable that this apparent decrease is due to greater strictness and better supervision leading to more accurate returns being obtained from one or two large districts in which it appears that falsification of returns had in the past been considerable.

The total performed by different agencies is shown as follows:—

291,107 by departmental vaccinators, 1,683 by the staff of dispensaries, 17,009 by tea garden agencies, 2,173 by jail and lunatic asylum agencies, and 426 by railway medical officers.

4. *Deaths from small-pox.*—The ratio of deaths from small-pox during the year 1915 was 58 per mille of population, against 37 in 1914. The highest rate, 3.10, was reported from the district of Kamrup. This district during the last five years has been reporting the highest rate of any district in the province and it plays a large part in maintaining the provincial small-pox mortality at a high level. The next highest rates, 1.22 and 1.07, were reported from the districts of Sibsagar and Goalpara, respectively. In these two districts, vaccination was pushed in the off-season to check an outbreak of small-pox. As a result of this measure, the revaccinations in the district of Sibsagar increased from 2,593 in 1914-15 to 7,894 in 1915-16, but no such increase is reported from Goalpara where the work has been unsatisfactory. The diagram showing death-rates from small-pox and the protection afforded by successful vaccination is attached.

5. *Dispensary vaccination.*—As compared with 2,209 persons in 1914-15, 1,683 persons were vaccinated in dispensaries in the districts of Nowgong, Naga Hills, Lushai Hills, Garo Hills and in the State of Manipur during the year.

6. *Percentage of successful operations.*—The percentage of success in the vaccination operations performed by the combined establishments was 96.63 for primary vaccinations and 62.29 for revaccinations, as compared with 96.22 and 68.69, respectively, in 1914-15.

The percentage of success in primary vaccinations and revaccinations in the case of vaccinators were 96.74 and 61.69, respectively, against 96.29 and 68.00, respectively, in 1914-15. In the case of the dispensary staff they were 94.31 and 70.13, respectively, against 92.14 and 58.76, respectively, in 1914-15; and in the case of other agencies they were 95.02 and 66.63, respectively, against 95.47 and 79.80, respectively, in 1914-15.

7. *Different methods of vaccination.*—As in previous years glycerinated vaccine manufactured by the Shillong Vaccine Depot was exclusively used in all operations.

8. *Vaccination work in different districts.*—Out of twelve districts, and the Native State of Manipur, there was an increase in two districts, a decrease in four and in the remaining districts there was practically no change, as compared with the records of work of the year 1914-15. The increase of 4,586 cases of revaccinations in the district of Sibsagar was due to the continuance of vaccination in the off-season to deal with an outbreak of small-pox in the district. It appears that the district is not well protected, and proposals for increasing the number of vaccinators for next vaccination season are now under consideration. Two vaccinators in this district were dismissed, one for extorting fees to which he was not entitled, and the other for falsifying his returns. The increase of 2,764 operations in the district of Darrang is satisfactory and is due to the personal efforts of the Civil Surgeon, Major J. W. McCoy, I.M.S. Besides the ordinary routine followed in carrying on vaccination the Civil

Surgeon arranged the collection of children from neighbouring villages in convenient centres where they were vaccinated under his personal supervision. At the close of the vaccination season four refractory villages in this district, which had refused vaccination for years, are reported to have been vaccinated through the influence of the Deputy Commissioner. The increase in the district of Nowgong has been maintained and the work of the last season shows an advance of 252 operations over the record of the preceding year. In this district during the last 5 years the protected ratio has risen from 27·9 in 1910-11 per 1,000 to 44·5 per 1,000 in 1915-16 and the deaths from small-pox have fallen from 1,013 in 1910-11 to 55 in 1915-16. The satisfactory result has been attained by the administrative ability of the Civil Surgeon Lieutenant C. Banerjee, I.S.M.D., aided by official pressure tactfully exercised by the Deputy Commissioner. The fall of 5,571 operations in the district of Kamrup is due to a reduction in the staff of vaccinators. In this district both paid and licensed vaccinators have been entertained. The Civil Surgeon finding the work of certain of the licensed vaccinators to be unsatisfactory dismissed 14 of them. Seven paid vaccinators were discharged for submitting false returns and some of them could not be replaced. The returns of the year under report although smaller in total are probably more accurate than those submitted in former years and the above decrease is really an index of the attention given to district vaccination by Assistant Surgeon Nalini Prasad Neogi, the Officiating Civil Surgeon. Nine thousand two hundred and twenty Mahapurushias were vaccinated during the year, as compared with 8,900 in the previous year. The decrease of 4,659 operations in the district of Khasi and Jaintia Hills is not satisfactory. The decrease is reported to be due to the grant of leave to one vaccinator, while another was unable to work for a month on account of the prevalence of cholera in his circle, from which disease he subsequently died. I do not consider this explanation to be satisfactory and the matter is receiving departmental attention. The decrease of 1,591 operations in the district of Goalpara is due to bad work by the Inspector and the Sub-Inspector of Vaccination. Both of these have been reported to be lazy and disobedient by the Civil Surgeon and suitable action is being taken. In Sylhet better work has been done in the supervision of district vaccination, large numbers of unprotected persons have been vaccinated in newly constituted compulsory areas, while there has been a decrease in the amount of travelling allowance drawn, and an increase in the amount of inspection done by the inspecting staff. The work done by the vaccination staff in the district of Lakhimpur shows a decrease of 3,693 operations as compared with that of the preceding year. The decrease is stated to be due to the fact that a permanent vaccinator was ill for two months in the vaccination season and could not do any work, and two temporary paid vaccinators had to be dismissed on account of their work being unsatisfactory. A decrease in the number of vaccination operations performed in the Lushai, Naga and Garo Hills districts shows that the Officiating Civil Surgeons of these districts must give more attention to their district vaccination than they have done. The Civil Surgeon, Lushai Hills, did not despatch his Vaccination Report which should have reached this office on May 1st, until May 17th and it was received in Shillong on 24th May thereby entailing delay in the submission of this report to Government. Departmental action is being taken to deal with this delay. The return for the North-East Frontier district where two temporary vaccinators were appointed last season, has not yet been received.

9. *Composition and strength of the inspecting staff.*—There was no change during the year in the strength of the cadre of the subordinate inspecting staff.

10. *Verification by the inspecting staff.*—During the year 7·32 and 7·93 per cent. of the primary operations and revaccinations respectively, were inspected by Civil Surgeons, as compared with 4·28 and 4·05, respectively, in 1914-15. The percentage of inspections in the case of the subordinate inspecting staff was 53·16 and 51·65, respectively, against 51·66 and 41·30 respectively, in the preceding year. During the year the tour diaries and travelling allowance bills of the inspecting staff in Sylhet, Cachar and Kamrup have been forwarded to this office for scrutiny, with the result that the departmental orders limiting their stay at headquarters and prescribing the amount of work done by them, have been followed. In contrast with this I find that in other districts these orders have been largely ignored, and consequently this system of check will now be extended to all districts.

11. *Vaccination in compulsory areas.*—During the year the Bengal vaccination Act V of 1880 was extended to the towns of Karimganj, Sunamganj and Maulvi Bazar and the Imperial Act, XIII of 1880, was extended to the town of Barpeta. In 17 compulsory areas, 3,716 births and 710 deaths among children under 1 year of age

were recorded in 1915 and 1,474 children were successfully vaccinated. According to this rough calculation the proportion of 49·03 per cent. of the available children in these areas was protected against small-pox as compared with 67 per cent. in the previous year.

Ninety-one per cent. of the available children were vaccinated in the town of Goalpara, in Nowgong 87 per cent., in Dhubri and Golaghat 75 per cent., in Gauhati 74 per cent., in Jorhat 63 per cent., in Dibrugarh 62 per cent., in Sibsagar 55 per cent., in Silchar 49 per cent., in Shillong 42 per cent., in Sunamganj 38 per cent., in Tezpur 35 per cent., in Barpeta 32 per cent., in Maulvi Bazar 29 per cent., in Karimganj 24 per cent., in Habiganj 14 per cent., and in Sylhet 7 per cent. These figures do not, however, represent the totals of primary vaccination operations on children over 1 year of age. It depends upon the closeness of the administration of the Act by the Civil Surgeon of the district what number of children are allowed to complete their first year of life without vaccination. The machinery of the Act is now administered with sufficient efficiency to ensure that few, if any, of these children eventually escape vaccination, but steps are being taken to complete the vaccination of the towns in which it is in default. In the town of Sylhet only 23 children out of an available total of 321 have been vaccinated; this is a poor record of work.

12. *Vaccine Depot*.—The number of capillary tubes loaded during the year 1915-16 was 497,692 as compared with 547,447 in the year 1914-15. The decrease is due to the fact that in the latter year lymph was supplied to the Eastern Bengal districts for a certain portion of that year. 356 calves were inoculated during the year and lymph was taken from 285; the lymph of the remaining 71 was rejected as unsuitable. The average number of tubes filled per calf was 1,746 as compared with 1,684 in 1914-15.

Failures in the October supply of lymph were as usual reported from some districts and it appears almost certain that this is caused by too early an issue of the lymph which is rendered inert by exposure to heat before use. Arrangements are being made to prevent this.


13. *Cost of the Department*.—Including the charges of the Vaccine Depot the total amount of expenditure on vaccination in 1915-16 was Rs. 51,441-10-9 as compared with Rs. 62,169-9-0 in 1914-15. The decrease of Rs. 10,727-14-3 is due to decreased expenditure in the Vaccine Depot consequent on the discontinuance of the supply of lymph to the Eastern Bengal districts and to reduced expenditure under the head travelling allowance as the result of closer supervision. The amount of travelling allowance drawn in Cachar where certain abuses had been prevalent, has been reduced by Rs. 1,422 as compared with last year, by transferring the Inspector of Vaccination elsewhere, dismissing the Sub-Inspector, and checking the travelling allowance bills in this office. The report of the Khasi and Jaintia Hills shows an unsatisfactory increase in the travelling allowance drawn, along with other deficiencies of work, and the district work will receive my attention.

Of the total expenditure of Rs. 51,441-10-9 during the year, Rs. 28,320-3-9 were paid from Provincial Revenues, Rs. 20,457-7-2 from Local Funds, Rs. 1,501-9-10 from Municipal Funds and Rs. 1,162-7-0 were contributed by the State of Manipur. The average cost of each successful vaccination during the year was annas three and pie one against annas three and pies seven in 1914-15.

14. *General*.—During the year 14,821 primary vaccinations and 2,158 revaccinations were performed in tea estates in the plains districts and their percentages of success were 96·51 and 74·75, respectively. The Civil Surgeon, Lakhimpur, suggests that a charge should be made for lymph supplied to tea estates as the number of operations returned by them is very small compared with the amount of lymph supplied, and he suggests that a charge will lead to more economical use of the lymph. It is possible that the real defect lies mainly in the non-receipt of returns in regard to vaccination. Further consideration of this suggestion will follow on the receipt of information as to the total amount of lymph supplied to tea estates and a comparison of this total with that of the operations reported. One hundred and seventy-seven primary vaccinations and 249 revaccinations were reported to have been performed within railway limits by railway medical officers and their percentages of success were 83·43 and 60·09, respectively. Eight hundred and twenty-six primary operations and 1,347 revaccinations were performed in Jails and in the Lunatic Asylum at Tezpur by the medical officers of these institutions and their percentages of success were 70·01 and 54·73, respectively.

T. C. McCOMBIE YOUNG, *Major, I.M.S.*,

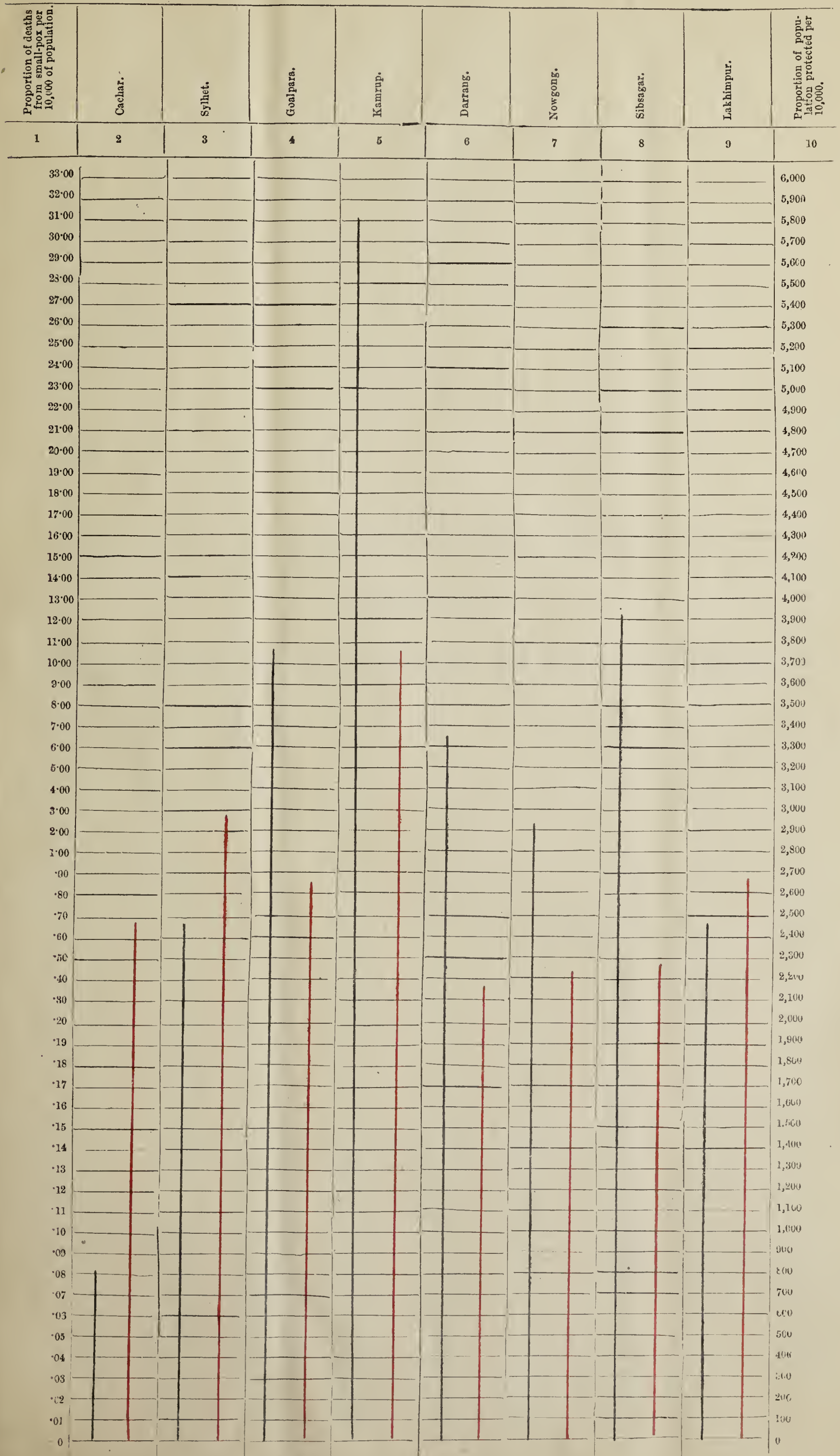
Sanitary Commissioner, Assam.



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The following diagram illustrates the death-rates from small-pox in each district side by side with the proportion of the population protected against the disease by vaccination during the seven years 1909-1910 to 1915-1916.



Note.—Black lines indicate death-rates from small-pox.
Red lines indicate the proportion of population protected by vaccination.

STATEMENTS.

Sum

			Total number of persons vaccinated.		Total number of operations performed.	
			Primary.	Re-vaccinations.	Primary.	Re-vaccinations.
1			2	3	4	5
By special staff (Statement I)	...	...	256,654	34,453	256,654	34,453
By dispensary staff (Statement III)	...	...	1,095	588	1,095	588
By other agencies—tea garden, Railway and Jail agencies	...	...	15,824	3,784	15,824	3,784
	Total	...	273,573	38,825	273,573	38,825

DEPARTMENT.
the Province of Assam during the year 1915-16.

vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of deaths from small-pox during previous five years.		
Successful.		Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.	
Over one and under six years.	Total of all ages.														
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
9,200	12,247	167	2,236	1,394	95	96.63	65.11	27.42	1.30	4.24	16,779	33.72	5	.01	
70,962	98,208	32	9,708	4,634	...	98.31	47.73	41.59	.03	...	107,575	43.50	910	.36	
2,315	4,365	5	1,200	598	24	98.31	50.85	21.11	.11	2.00	8,024	34.13	15	.06	
2,137	3,271	131	272	176	5	87.64	65.91	23.03	3.39	1.80	4,776	32.58	...	...
3,245	3,286	363	260	145	31	72.47	63.31	37.61	7.41	11.92	2,692	29.51	...	...
87,859	121,377	698	13,676	6,947	155	96.89	51.37	37.23	.55	1.13	139,846	40.58	930	.26	
61	301	1	350	160	53	98.36	53.83	38.68	{	.32	15.14	21,906	36.47	336	.55
10,429	19,540	111	4,457	3,235	276	95.43	77.37								
19,909	28,605	106	3,318	1,774	111	96.34	55.31	52.48	{	.35	3.34	37,333	55.90	959	1.43
2,676	4,622	9	88	49	8	98.52	61.25								
8,460	11,989	137	2,901	1,574	200	94.16	58.27	35.94	1.06	.06	11,041	29.25	195	.51	
7,211	11,966	2	285	206	...	99.24	72.28	40.09	.01	...	9,420	31.02	283	.93	
10,393	17,606	120	7,894	5,207	678	96.79	72.15	33.04	.65	8.58	18,810	27.24	129	.18	
5,481	7,518	29	303	139	...	95.39	45.87	21.92	{	.36	...	14,172	30.21	22	.04
2,329	2,644	8	2	1	...	96.79	50.00								
2,626	6,853	275	1,169	964	124	95.47	92.24	49.21	3.68	10.60	14,317	90.03	22	.13	
54,141	84,843	670	16,220	10,024	1,166	96.36	66.65	38.23	{	.75	7.18	126,999	38.86	1,946	.59
15,434	26,786	128	4,547	3,285	284	96.09	77.05								
867	12,966	907	10	8	...	99.22	80.00	37.47	6.49	...	12,009	34.68	...	...
142,867	219,186	2,275	29,906	16,979	1,321	96.82	59.39	37.71	{	.99	4.41	278,854	39.49	2,876	.40
15,434	26,786	128	4,547	3,285	284	96.09	77.05								
158,301	245,972	2,403	34,453	20,264	1,605	96.74	61.69	..	{	.93	4.66	1,622
638	945	93	588	364	69	94.31	70.13								
47	141	8	249	131	31	83.43	60.09	...	4.52	12.45	83	...	...	...
6,890	14,266	40	2,188	1,587	65	96.51	74.75	...	.27	2.97	11,983	...	...	...
1	565	19	1,347	728	17	70.01	54.73	...	2.30	1.26	547	...	...	...
165,877	261,889	2,563	38,825	23,074	1,787	96.63	62.29	41.51	.93	4.60	293,089	41.51	2,876	.40	

mary.

Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccination per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
Primary.	Re-vaccinations.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
6	7	8	9	10	11	12	13	14
96.74	61.69	303	961	53,024	158,301	37.71	Rs. a. p. 51,441 10 9	Rs. a. p. 0 3 1
94.31	70.13	...	...	260	638	...	...	...
95.02	66.63	...	...	6,863	6,938	...	...	...
96.63	62.29	303	961	60,147	165,877	41.51	51,441 10 9	0 3 1

Statement No. II—Showing the cost of Vaccination in

No.	District.	Expenditure												
		European supervising officer.	Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.	Total pay of establishment.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	Rs. a. p.
1	Cachar ... ..	...	...	2	941 8 2	18	1,737 10 11	...	...	...	...	...	...	2,679 3 1
2	Sylhet ... ..	...	...	7	2,201 6 1	81	6,540 6 2	...	...	...	...	...	...	8,741 12 3
3	Khasi and Jaintia Hills	...	...	2	689 8 2	9	1,728 0 0	...	...	...	...	...	...	2,417 8 2
4	Naga Hills ... ..	...	...	1	300 0 0	5	817 5 4	...	...	...	...	...	...	1,117 5 4
5	Lushai Hills ... ..	...	...	1	226 4 10	5	516 0 0	...	...	...	...	...	...	742 4 10
6	Goalpara ... ..	...	...	2	731 9 7	2	486 0 0	26	...	...	...	...	...	1,217 9 7
7	Kamrup ... ..	...	...	3	1,031 6 4	48	3,566 13 11	12	...	...	...	...	...	4,598 4 3
8	Darrang ... ..	...	...	2	789 0 0	16	1,822 15 7	...	...	...	...	...	...	2,611 15 7
9	Nowgong ... ..	...	...	2	805 9 3	16	1,271 9 1	...	...	...	...	...	...	2,077 2 4
10	Sibsagar ... ..	...	...	3	1,040 0 0	26	1,942 14 10	...	...	...	...	...	...	2,932 14 10
11	Lakhimpur ... ..	...	...	2	900 0 0	14	1,440 0 0	10	...	...	...	...	...	2,340 0 0
12	Garo Hills ... ..	...	...	1	283 2 6	6	677 12 7	...	...	...	...	...	...	980 15 1
13	Manipur State ... ..	...	...	1	240 0 0	9	600 0 0	...	...	...	...	...	...	840 0 0
	Total of Districts ...	...	...	28	10,179 6 11	255	23,147 8 5	48	...	...	...	...	...	33,326 15 4
	Shillong Vaccine Depot	1	600 0 0	1	1,980 0 0	12	1,702 3 5	...	...	...	...	...	...	4,282 3 5
	Total for the Province	1	600 0 0	29	12,159 6 11	267	24,849 11 0	48	...	...	...	...	...	37,609 2 9

NOTE.—The average cost of each successful vaccination as shown in column 27 has been calculated on the

the Province of Assam during the year 1915-16.

Expenditure.				Paid from						Number of all successful vaccinations and re-vaccinations.	Average cost of each successful case.
Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native State.	Total.		
	Cost of lymph.	Other contingencies.									
16	17	18	19	20	21	22	23	24	25	26	27
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.
1,092 10 0	...	94 15 6	3,866 12 7	...	1,683 8 2	2,123 4 5	60 0 0	...	3,866 12 7	13,641	0 4 6
2,251 3 6	...	233 15 11	11,226 15 8	...	3,132 15 9	7,830 15 1	263 0 10	...	11,226 15 8	102,842	0 1 9
1,195 15 0	...	10 14 0	3,624 5 2	...	3,432 5 2	...	192 0 0	...	3,624 5 2	4,963	0 11 9
441 12 0	1,559 1 4	...	1,559 1 4	...	...	...	1,559 1 4	3,447	0 7 3
388 4 0	...	55 7 8	1,186 0 6	...	1,186 0 6	...	...	...	1,186 0 6	3,431	0 5 6
427 15 0	...	72 1 6	1,717 10 1	...	1,135 14 4	536 11 9	45 0 0	...	1,717 10 1	23,236	0 1 2
330 0 9	...	171 8 0	5,099 13 0	...	1,192 13 4	3,487 11 11	419 3 9	...	5,099 13 0	35,050	0 2 3
394 4 0	...	10 8 0	3,016 11 7	...	1,123 12 0	1,709 15 7	180 0 0	...	3,016 11 7	13,563	0 3 6
299 4 9	...	30 0 0	2,406 7 1	...	1,109 14 3	1,264 3 7	32 5 3	...	2,406 7 1	12,172	0 3 1
537 15 0	...	95 14 0	3,616 11 10	...	1,673 13 0	1,812 14 10	180 0 0	...	3,616 11 10	22,813	0 2 7
751 14 6	...	400 8 0	3,492 6 6	...	1,620 12 6	1,691 10 0	180 0 0	...	3,492 6 6	10,282	0 5 5
519 3 6	...	10 0 0	1,490 2 7	...	1,490 2 7	...	...	...	1,490 2 7	7,822	0 3 0
..	308 0 0	14 7 0	1,162 7 0	...	...	...	...	1,162 7 0	1,162 7 0	12,974	0 1 5
8,630 6 0	308 0 0	1,200 3 7	43,465 8 11	...	20,344 0 11	20,457 7 2	1,501 9 10	1,162 7 0	43,465 8 11	266,236	0 2 7
...	...	3,693 14 5	7,976 1 10	...	7,976 1 10	...	...	...	7,976 1 10	...	...
8,630 6 0	303 0 0	4,894 2 0	51,441 10 9	...	28,320 2 0	20,457 7 2	1,501 9 10	1,162 7 0	51,441 10 9	266,236	0 3 1

total number of successful vaccinations and re-vaccinations performed by the Special Department only.

B.—DISPENSARY

Statement No. III—Showing Dispensary Vaccination

District.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the season.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.				
					Total.	Successful.			Un-known.
						Under one year.	Over one and under six years.	Total of all ages.	
1	2	3	4	5	6	7	8	9	10
Cachar
Sylhet
Khasi and Jaintia Hills
Naga Hills	428	...	371	51	256	347	3
Lushai „	276	...	243	9	187	196	29
Goalpara
Kamrup
Darrang
Nowgong	240	...	238	68	160	235	3
Sibsagar
Lakhimpur
Garo Hills	619	...	123	12	35	47	58
Manipur State	120	...	120	120	...	120	...
Total	1,683	...	1,095	260	638	945	93

Comparative Statement No. IV—Showing the number of persons primarily vaccinated, in each of the under-

Establishment.	Persons							
	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
	Year ending							
	1906-07.		1907-08.		1908-09.		1909-10.	
1	2	3	4	5	6	7	8	9
Government ...	27,714	29,119	39,432	38,531	39,838	39,078	31,212	30,128
Dispensaries ...	23,319	22,614	15,664	15,294	3,160	2,990	2,818	2,474
Municipal ...	2,748	2,735	3,299	3,262	3,513	3,098	2,309	2,182
Local Funds ...	165,182	162,257	146,694	142,534	150,917	149,433	147,644	142,315
Licensed vaccinators	37,704	37,562	25,072	24,874	31,084	30,929	39,645	38,285
Apprentices ...	10,857	7,756	3,812	3,801	5,010	4,920	5,187	5,102
Native States ...	15,527	14,281	14,247	12,150	13,302	11,100	13,316	10,166
Total ...	283,051	276,354	243,220	240,416	246,824	241,548	242,131	230,652

VACCINATION.

in the Province of Assam during the year 1915-16.

Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
11	12	13	14	15	16	17
...
...
...
57	49	4	94.00	92.45	.80	7.01
33	12	...	91.58	36.36	11.93	...
...
...
...
2	1	...	100.	50.00	1.26	...
...
...
496	302	65	72.30	70.07	47.15	13.10
...	...	...	100.	...	...	...
588	364	69	94.31	70.13	8.49	11.73

and the number of those persons who were successfully vaccinated in the Province of Assam mentioned official years.

primarily vaccinated.

Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
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31st March.

1910-11.		1911-12.		1912-13.		1913-14.		1914-15.		1915-16.	
10	11	12	13	14	15	16	17	18	19	20	21
25,926	23,580	24,950	24,146	30,130	28,802	33,014	31,655	23,384	20,649	21,309	18,365
2,549	2,128	1,464	1,390	1,036	937	1,005	900	1,580	1,430	1,095	945
2,347	2,237	3,262	3,023	3,517	3,093	2,897	2,865	2,828	2,684	5,575	5,389
161,234	154,616	179,887	176,566	179,380	176,043	179,040	176,981	169,629	163,948	173,757	168,724
31,811	29,902	37,963	37,231	45,790	44,336	44,537	43,523	34,560	32,706	25,697	24,562
4,682	4,563	16,762	16,411	13,669	13,542	15,329	15,007	17,208	16,645	16,342	15,966
13,358	11,612	13,193	11,756	13,656	11,521	13,626	12,343	13,756	12,595	13,974	12,966
241,907	228,638	277,481	270,523	287,178	278,274	289,448	283,274	262,945	250,657	257,749	246,917

Statement No. V—Showing particulars of Vaccination verified by Inspecting Officers for the year 1915-16.

District.	Total number of persons vaccinated.		Total number inspected				Percentage of inspection to total number vaccinated				Percentage of cases found successful to total number inspected				Percentage of successes reported by vaccinators.	
			By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.		By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.		By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar ...	12,840	2,236	462	19	8,140	199	3.50	.84	63.39	8.90	97.83	10.52	96.17	44.10	96.63	65.11
Sylhet ...	99,922	9,708	8,976	1,272	53,707	6,018	8.98	13.10	53.74	61.99	98.57	71.46	97.03	47.44	98.31	47.73
Khasi and Jaintia Hills ...	4,445	1,200	426	82	3,209	1,047	9.58	6.83	72.19	87.25	98.36	52.56	97.81	42.70	98.31	50.85
Naga Hills ...	4,234	320	503	5	2,123	75	11.88	1.52	50.14	22.79	81.27	...	81.87	72.00	87.64	65.91
Lushai „ ...	5,140	293	232	6	1,440	48	4.51	2.04	28.19	16.37	63.09	33.33	76.88	52.08	72.47	63.31
Goalpara ...	20,892	4,807	2,262	89	9,697	4,807	10.82	1.85	46.41	100	93.89	61.7	91.85	76.84	95.48	75.81
Kamrup ...	34,497	3,406	654	152	12,227	1,706	1.55	.11	35.44	52.73	90.25	100	90.69	40.33	96.64	55.46
Darrang ...	12,869	2,901	1,126	325	6,118	945	8.74	11.20	47.54	32.57	92.89	54.76	91.84	47.18	94.16	58.27
Nowgong ...	12,297	287	821	33	8,202	95	5.69	10.80	66.69	33.10	96.30	70.06	98.49	83.70	99.24	72.28
Sibsagar ...	18,809	7,894	941	510	11,813	2,473	5.13	6.46	64.52	31.32	98.83	86.86	93.09	72.54	96.79	72.15
Lakhimpur ...	10,629	305	366	30	10,629	117	3.44	0.83	100	38.36	98.63	66.67	97.93	48.72	95.75	45.90
Garo Hills ...	7,581	1,665	647	259	1,198	480	8.53	15.55	15.80	28.82	89.95	61.39	73.79	65.00	95.47	92.24
Manipur State ...	14,094	10	1,460	...	8,524	...	10.35	...	60.48	...	14.36	...	89.07	...	99.22	80.00
Total ...	257,740	35,041	18,876	2,782	137,036	18,100	7.32	7.93	53.16	51.63	92.40	60.93	90.50	58.47	96.74	61.69

Statement No. VI—Showing the number of Vaccinations performed in Municipal towns on children under one year of age during the year 1915-16.

District.	Town.	Number of births during the year 1915.	Number of deaths amongst children under one year during the year 1915.	Number of successful vaccination on children under one year during the year ending 31st March 1916.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Cachar	... Silchar ...	196	29	82	21st January 1892.
	{ Sylhet ...	412	91	23	1st October 1882.
	{ Habiganj ...	143	46	14	11th December 1913.
Sylhet	... { Sunamganj ...	88	30	22	17th September 1915.
	{ Karimganj ...	53	8	11	17th June 1915.
	{ Maulvi Bazar ...	92	19	21	2nd July 1915.
Khasi & Jaintia Hills	Shillong ...	348	23	137	21st June 1895.
	Total of Surma Valley and Hill Districts.	1,332	246	310	
Goalpara	... { Dhubri ...	132	17	87	13th February 1891.
	{ Goalpara ...	187	25	147	12th November 1890.
Kamrup	... { Gauhati ...	305	55	184	August 1882.
	{ Barpeta ...	606	177	136	29th October 1915.
Darrang	... Tezpur ...	177	33	51	22nd May 1907.
Nowgong	... Nowgong ...	193	29	144	7th April 1897.
	{ Sibsagar ...	165	26	77	21st January 1892.
Sibsagar	... { Jorhat ...	164	41	84	12th April 1892.
	{ Golaghat ...	80	13	50	24th March 1892.
Lakhimpur	... Dibrugarh ...	375	48	204	September 1883.
	Total of Assam Valley Districts.	2,384	464	1,164	
	Total for the Province.	3,716	710	1,474	

Statement No. VII—Showing, side by side, the ratio per 1,000 of population of deaths

District.	1906-07.		1907-08.		1908-09.		1909-10.	
	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.
1	2	3	4	5	6	7	8	9
Cachar	·01	18,640	·004	15,563	·01	13,533	·02	15,177
Sylhet	·02	108,268	·09	82,038	·08	83,817	·07	79,768
Khasi and Jaintia Hills ... ..	...	5,018	·08	13,179	·43	21,272	·59	8,815
Naga Hills	·009	5,535	·02	8,557	...	4,777	...	5,335
Lushai „ ... ..	...	1,694	·01	3,517	...	3,585	...	2,738
Goalpara	1·22	17,989	·67	16,922	·34	21,875	·83	26,561
Kamrup	3·34	29,365	3·45	31,695	2·40	31,024	1·07	27,111
Darrang	1·79	12,141	4·19	9,226	2·77	9,028	1·22	6,778
Nowgong	·69	7,769	·35	7,139	2·44	5,483	3·49	4,523
Sibsagar	·06	25,727	·63	20,295	·85	21,814	·57	19,084
Lakhimpur	·36	16,712	·74	15,409	·15	14,613	·08	14,688
Garó Hills	·007	15,126	...	16,826	...	14,851	·09	17,120
Manipur State ... ..	...	15,310	...	12,152	...	11,370	...	10,429
Total	·55	279,321	·78	252,518	·64	257,042	·47	238,127

from small-pox and the number of successful vaccination during the ten years ending 1915-16.

1910-11.		1911-12.		1912-13.		1913-14.		1914-15.		1915-16.	
Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.
10	11	12	13	14	15	16	17	18	19	20	21
·03	15,635	·002	16,641	·008	16,992	·006	19,596	...	15,146	·008	13,641
·07	83,189	·38	108,987	·99	132,022	·47	113,226	·14	100,597	·06	102,842
·04	5,026	·004	7,369	·13	10,740	·35	9,128	·64	8,108	·02	4,963
...	4,518	...	4,836	...	5,119	...	6,363	...	4,572	...	3,843
...	2,799	...	3,121	...	3,123	...	3,027	...	3,481	·02	3,639
·28	19,065	·44	23,151	·69	19,731	·59	23,408	·78	24,185	1·07	23,236
·58	25,006	1·21	39,178	1·89	39,978	1·02	42,323	2·03	40,178	3·10	35,050
·30	10,036	·56	10,606	·50	10,964	·82	11,508	·36	12,092	·61	13,563
3·05	7,456	·44	8,469	·95	6,602	·43	12,946	·24	12,494	·25	12,408
·19	21,089	·16	18,490	·09	18,298	·14	18,768	·18	18,077	1·22	22,813
·05	14,470	...	14,119	·006	14,063	·07	14,227	·09	13,982	·06	10,282
·15	13,219	·01	15,161	·09	12,338	·84	22,813	·60	9,368	·39	8,171
...	12,082	...	12,025	...	11,678	...	12,498	...	12,879	...	13,094
·28	233,590	·35	282,153	·67	301,648	·40	309,831	·37	275,159	·58	267,545

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